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NOTES ON NORTHWESTERN FLORA.

PART 1.

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In this paper the opportunity is taken to describe four new species of plants, including three members of the Portulacaceae and one of the Gentianaceae. In addition to their interest from the botanical viewpoint, all of these plants, after being tested, have proved of definite horticultural value as rock garden subjects.

Claytonia nivalis, sp. nov.

Perennial from a thick, fleshy, elongated tap-root, 1–2 cm. in diameter; stems fleshy, numerous, 3.5–6 cm. long, bearing 2 subopposite linear leaves, 1 cm. long; basal leaves numerous, thick and very fleshy, crowded in a basal rosette, distinctly spatulate, 5–8 cm. long, 1-nerved; petiole winged only at the base, distinctly oval in cross-section above, edges of leaf blade and petiole rounded; blade pinnately veined, entire, cuneate at base, apex usually rounded or occasionally abruptly acute, 8–15 mm. broad, 2–3 mm. thick, about half as long as the petiole; inflorescence a 3–7 flowered corymb, shorter than the basal leaves or equalling them at fruiting time; pedicels about 1 cm. long; flowers clear rose pink, 2 cm. broad; sepals 2, unequal, ovate, 8–11 mm. long; petals 5, nearly cuneate, more or less truncate at apex, about 7-veined, 12–14 mm. long, 6–8 mm. wide; stamens 5, 7–8 mm. long; anthers about 2 mm. long; capsule ovoid, 3-angled, 4 mm. long; seeds, discoid, shiny, black, 2 mm. long. The measurements here compiled are based upon live material.

Radix verticalis incrassata carnosa; caules numerosi carnosi; folia basilaria numerosa spatulata petiolata 5–8 cm. longa, laminae unicostatae penninerviis; folia caulis 2 subopposita linearia 1 cm. longa; inflorescentia corymbiformis 3.5–6 cm. longa, flora 3–7; sepala ovata 8–11 mm. longa; petala cuneata truncata lucida rosea 12–14 mm. longa; capsula ovoidea; semina nigra 2 mm. longa.

WASHINGTON: Cold, north, rocky exposure near perpetual snow, at the crest of the Wenatchee Ridge about 1 mile south east of the top of

Ingalls Peak, Wenatchee Mountains, 7000 ft. elevation, Chelan Co., August 4, 1933, *English* 1732 (type in Herb. *Carl S. English, Jr.*); live plants which were grown in the garden were collected: north rocky exposure near perpetual snow, west arm of Ingalls Peak, Kittitas Co., September 3, 1932.

Piper and others have included this new species under *C. megarrhiza.* After growing, side by side for a season, the three species, *C. megarrhiza* Parry (obtained from D. M. Andrews, Boulder, Colorado), *C. bellidifolia* Rydberg (collected at Paulina Peak, Deschutes County, Oregon by the writer) and *C. nivalis* (from the Wenatchee Mountains), conclusive evidence was found, as pointed out below, to prove that the Wenatchee Mountain plant is a distinct species.

The new species, *C. nivalis,* is most closely related to *C. bellidifolia* Rydberg and *C. megarrhiza* Parry. *C. nivalis* may be distinguished from *C. bellidifolia* by the absence of the scarious dilated base of the stem leaves; corymb branches elongate; sepals 8–11 mm. long; petals clear rose color, cuneate, truncate, 12–14 mm. long. On the contrary, *C. bellidifolia* has stem leaves with a scarious dilated base; corymb branches nearly sessile; sepals 4–5 mm. long; petals white or pink-veined, rounded at apex, about 7 mm. long.

C. nivalis may be distinguished from *C. megarrhiza* by having basal leaves with petiole winged only at base, edges rounded, blade 8–15 mm. broad; corymb branches elongated; sepals 8–11 mm. long; petals clear rose, truncate at apex, 12–14 mm. long. On the contrary, *C. megarrhiza* has basal leaves 1.5–3 cm. broad, with petioles very broadly winged their entire length; corymb branches almost sessile; sepals 7 mm. long; petals white, more or less emarginate at apex, 5–10 mm. long.

Lewisia rupicola, sp. nov.

Perennial from a thick tap-root; caudex of old plants often branched at the base; stems numerous, 12–18 cm. long; basal leaves evergreen, numerous, crowded in a dense rosette, thick fleshy, entire, linear to linear-spatulate, 2–4 cm. long, 4–5 mm. broad; cauline leaves fleshy, few, 4–10 mm. long, upper glandular ciliate; inflorescence corymbose, 10–25 flowered; sepals 2, glandular ciliate, orbicular, 3 mm. long; petals 7–10, bright magenta to rose, oblong, 12–13 mm. long, 4.5 mm. broad, 5–7 parallel nerves more deeply colored, somewhat erose at apex; stamens mostly 6, two-thirds as long as the petals; capsule conical, seeds several, shiny black, about 2 mm. long, more or less pear shaped.

Radix verticalis carnosa; caules numerosi 10–25 cm. longi; folia basilaria carnosa numerosa linearia 2–4 cm. longa, 4–5 mm. lata; petala oblonga 12–13 mm. longa, lucida rosea; semina nigra.

OREGON: Described from plants in cultivation, originally collected on bare, almost perpendicular basaltic rock cliffs, 2000–3000 ft. elevation, Saddle Mountain, Clatsop County, July 23, 1931. The type specimen (Herb. Carl S. English, Jr.) was taken from the writer's garden in Portland, October 8, 1931, *Carl S. English, Jr.,* 1734. This plant is known only from the one isolated locality.

Lewisia rupicola is most closely related to *Lewisia columbiana* Howell. *L. rupicola* may be distinguished by having branches of the caudex quite slender, leaves more numerous in rosettes that are more compact and symmetrical, leaves more slender and shorter, flowers magenta rose, petals 12–13 mm. long. On the contrary, *L. columbiana* has branches of the caudex short and thick, leaves broader, of varying lengths, in a loose rosette, petals with only the veins rose colored, or white, petals 8–10 mm. long.

Talinum okanoganense, sp. nov.

Perennial from a thickened tap root 3–7 mm. in diameter; branches cespitose, numerous, short, diffuse, 1–3 mm. in diameter, more or less clothed with leaf midribs of the previous season; leaves deciduous, crowded, linear, almost terete, mucronate, acute at apex, narrowed at base, gray green, 4–12 mm. long, 1–2 mm. wide; inflorescence a terminal corymb about 2–3 cm. long, 3–9 flowered, branched from near the base, branches subtended by scarious bracts 1 mm. long; pedicels 5 mm. long; sepals ovate, mucronate, with a narrow scarious margin, 3 mm. wide, 4 mm. long; petals usually 5, occasionally more, orbicular, white, 6–7 mm. broad, 7–8 mm. long; stamens about 20, distinct to base, 5 mm. long; anthers yellow; filaments white, glandular below; style 4 mm. long, stigma capitate, three lobed; capsule decidedly three angled, ovoid, 3 mm. broad, bearing 15–25 seeds; seeds shiny black, more or less kidney shaped, about 1 mm. long.

Herba perennis; radix verticalis carnosa; caules numerosi caespitosi diffusi; folia numerosa tereta linearia glauca, 4–12 mm. longa; inflorescentia corymbiformis, 2–3 cm. longa; petala orbiculata alba, 7–8 mm. longa; semina nigra.

WASHINGTON: Live plants of *Talinum okanoganense* were collected May 27, 1933, on the bare rock ledges of the ridge north west of the junction of Sweet Creek and the West Fork of Granite Creek, Okanogan Co., elevation 4000 ft., R. 31 E., T. 37 N. In this same township other plants were collected May 28, 1933, on Fir Mountain, 5666 ft. elevation, where large areas of snow still remained on the barren north slopes at this date. This plant occurs in both the Canadian and Hudsonian plant zones. The type specimen was taken from the writer's garden August 10, 1933, *English* 1733.

Talinum okanoganense is most closely related to *Talinum spinescens* of central Washington. *Talinum okanoganense* may be distinguished by its gray leaves 4–12 mm. long and 1–2 mm. wide, midribs persistent but not thick woody spines; flowers white, in corymbs 2–3 cm. long which lie in horizontal position. On the contrary, *Talinum spinescens* has green leaves 1.5–2.5 cm. long, 2.5 mm. wide, midribs becoming thick woody spines; flowers crimson magenta in erect corymbs 15 cm. long.

Talinum okanoganense is an especially attractive little plant. It thrives in bright sunshine, opening its numerous satiny white blossoms about midday. The ease with which it adapts itself to conditions in the garden, its neat, compact habit of growth and the profusion of flowers which it offers throughout the summer, combine to make this new plant an admirable subject for horticultural use in rock gardens.

The specific name, *okanoganense*, is derived from Okanogan, the name of the county in which the plant was discovered. The county received its name in honor of the aboriginal tribe of this region.

Gentiana saxicola, sp. nov.

Perennial herb from stout roots; stems tufted, stout, erect, 1.5–3 dm. high, 1–7 flowered; leaves ovate, sessile, 2–3.5 cm. long, 1.3–2.3 cm. wide, 5–9 veined, about equalling the internodes; uppermost leaves forming an involucre; calyx tube 9 mm. long, 11 mm. wide; corolla deep violet blue, greenish dotted within, 4 cm. long, 2 cm. wide, plaited, appendages acute, entire or bifid, corolla lobes orbicular, entire, expanding; stamens united to corolla tube for half the length, 2.3 cm. long; capsule stalked; seeds brown, appendaged, long pear shape, 1.5 mm. long.

Perennis herbaceus, caulis numerus strictus glabrus, 1.5–3 dm. altus, flora 1–7, folia integerrimis ovata sessilis 2–3.5 cm. longa; calyx tubis 9 mm. longus, lobis rotata deltoidea 9 mm. longa, 11 mm. lata; corollis grandis campanulatis azureis 4 cm. longa, lobis orbiculatis integerrimis.

WASHINGTON: Open rocky slopes and ledges, 4500 ft. elevation, Mountains northwest of Morton, Lewis County, T. 14 N., R. 3 E., *Carl S. English, Jr.*, 1650 (Type in Herb. Carl. S. English, Jr.), July 23, 1933. This species was observed also on Silver Star Mt., Skamania County, July 25, 1929, and August 1, 1930.

This new species is most closely related to *Gentiana calycosa*. *G. saxicola* may be distinguished by its habit of growing on open rocky slopes and ledges with complete drainage, stems stout and erect, calyx lobes rotate, broadly deltoid, as broad or broader than long, 9 mm. long and 9–11 mm. wide; corolla lobes orbicular, entire; leaves about equalling or exceeding the internodes. On the contrary *G. calycosa* grows in wet alpine meadows, stems procumbent, fertile ones eventually arching upward, calyx lobes erect, 5 mm. long, 3 mm. wide, corolla lobes erose margined, internodes usually much exceeding the leaves.